



Thyristor  
modules  
DCTL

Product designation

Product type designation

### General characteristics

|                                 |        |           |
|---------------------------------|--------|-----------|
| Rated voltage                   | V      | 400...480 |
| Operating voltage range         |        | 340...528 |
| Rated frequency                 | Hz     | 50/60     |
| Operating frequency range       | Hz     | 45...65   |
| Rated current (I <sub>e</sub> ) | A      | 11        |
| Step power at                   |        |           |
|                                 | 400VAC | kvar 9    |
|                                 | 440VAC | kvar 8    |
|                                 | 480VAC | kvar 9    |
| Peak inverse voltage (PIV)      | VAC    | 2200      |
| Number of controlled phases     | Nr.    | 2         |

Control circuit

12-24VDC input  
or free-voltage  
input or via  
RS485 serial port  
(with optional  
card EXC1042 in  
combination with  
controller  
DCRG8F +  
EXP1012)

### Auxiliary supply

Rated auxiliary supply voltage U<sub>s</sub>  
AC

|                           |     |     |       |
|---------------------------|-----|-----|-------|
|                           | min | VAC | 100   |
|                           | Max | VAC | 240   |
| Auxiliary rated frequency |     | Hz  | 50/60 |
| Power consumption Max     |     | VA  | 11.8  |
| Power dissipation Max     |     | W   | 4.6   |

### Control input

|                 |             |
|-----------------|-------------|
| Terminals       | CONTROL +/- |
| Rated voltage   | 12-24VDC    |
| Operating range | 8...30VDC   |

### Digital inputs

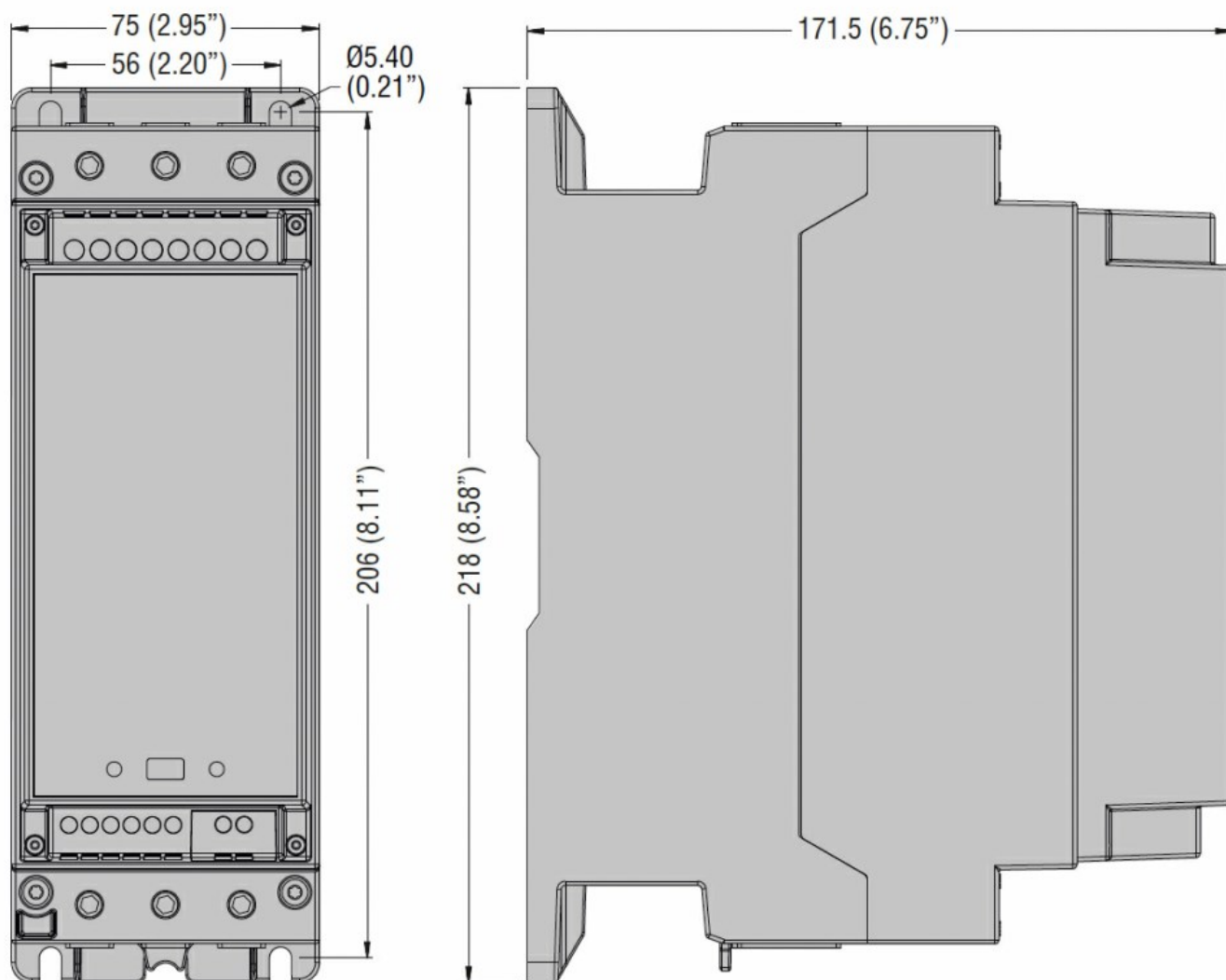
|                                       |          |
|---------------------------------------|----------|
| Terminals                             | C-IN1    |
| Applied voltage at contact (internal) | 5VDC     |
| Input current                         | mA ≤10   |
| Low input signal                      | VDC ≤0.8 |
| High input signal                     | VDC ≥3.2 |
| Input signal delay                    | ms ≥50   |

### NTC probe input

|           |         |
|-----------|---------|
| Terminals | NTC-NTC |
|-----------|---------|

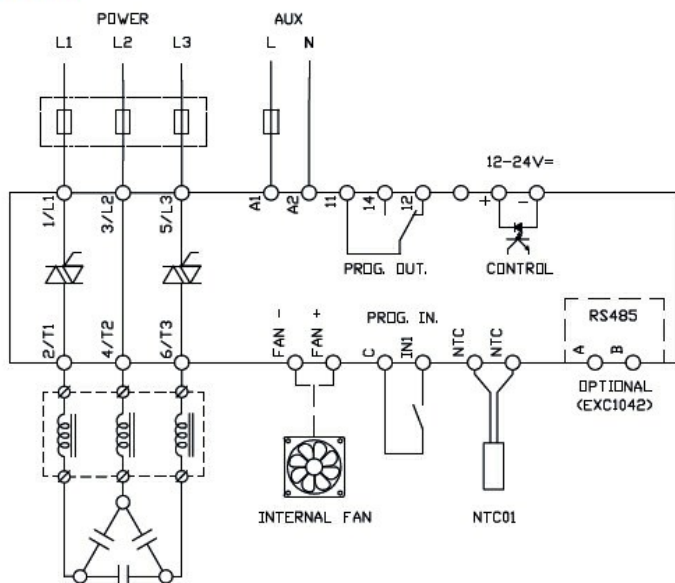
|                                         |                 |                                                               |                                                                           |
|-----------------------------------------|-----------------|---------------------------------------------------------------|---------------------------------------------------------------------------|
| Sensor type                             |                 |                                                               | NTC (ordering code NTC01)                                                 |
| Measuring range                         | °C              | -25...+85                                                     |                                                                           |
| Maximum connection lenght               | mt              | 3                                                             |                                                                           |
| Fan power supply                        |                 |                                                               |                                                                           |
| Terminals                               |                 |                                                               | FAN +/-                                                                   |
| Supply voltage (internal)               |                 |                                                               | 5VDC (provided by DCTL)                                                   |
| Fan type                                |                 |                                                               | 1 built-in fan type EXP8004                                               |
| Relay outputs                           |                 |                                                               |                                                                           |
| Number of relay output                  | Nr.             | 1                                                             |                                                                           |
| Contact arrangement                     |                 |                                                               | 1 C/O-SPDT                                                                |
| Rated current                           |                 |                                                               | NO contact: AC1 5A 250VAC / 5A 30VDC NC contact: AC1 3A 250VAC / 3A 30VDC |
| UL/CSA and IEC/EN 60947-5-1 designation |                 |                                                               | D300                                                                      |
| Maximum switching voltage               | VAC             | 250                                                           |                                                                           |
| Electrical life (with rated load)       | cycles          | NO contact: 10x10 <sup>3</sup> NC contact: 20x10 <sup>3</sup> |                                                                           |
| Mechanical life                         | cycles          | 10 <sup>7</sup>                                               |                                                                           |
| Insulations                             |                 |                                                               |                                                                           |
| Rated insulation voltage Ui IEC/EN      | V               | 480                                                           |                                                                           |
| Rated impulse withstand voltage Uimp    | kV              | 4                                                             |                                                                           |
| Connections - power terminals           |                 |                                                               |                                                                           |
| Type of terminal                        |                 |                                                               | Fixed - double lock clamp                                                 |
| Conductor cross section                 | min             | mm <sup>2</sup>                                               | 2 x 2.5                                                                   |
|                                         | Max             | mm <sup>2</sup>                                               | 2 x 35                                                                    |
|                                         | min             | AWG                                                           | 2 x 18                                                                    |
|                                         | Max             | AWG                                                           | 2 x 2                                                                     |
| Tightening torque (Max)                 | Nm<br>lbin/lbft |                                                               | 4-5<br>2.95-3.69 lbft                                                     |
| Connections - relay output              |                 |                                                               |                                                                           |
| Type of terminal                        |                 |                                                               | Screw                                                                     |
| Conductor cross section                 | min             | mm <sup>2</sup>                                               | 0.2                                                                       |
|                                         | Max             | mm <sup>2</sup>                                               | 4                                                                         |
|                                         | min             | AWG                                                           | 26                                                                        |
|                                         | Max             | AWG                                                           | 10                                                                        |
| Tightening torque (Max)                 | Nm<br>lbin      |                                                               | 0.8<br>7                                                                  |
| Connections - fan and digital input     |                 |                                                               |                                                                           |
| Type of terminal                        |                 |                                                               | Screw                                                                     |
| Conductor cross section                 | min             | mm <sup>2</sup>                                               | 0.2                                                                       |
|                                         | Max             | mm <sup>2</sup>                                               | 2.5                                                                       |

|                           |                       |     |      |                                                                         |
|---------------------------|-----------------------|-----|------|-------------------------------------------------------------------------|
|                           |                       | min | AWG  | 24                                                                      |
|                           |                       | Max | AWG  | 12                                                                      |
| Tightening torque (Max)   |                       |     |      |                                                                         |
|                           |                       |     | Nm   | 0.44                                                                    |
|                           |                       |     | lbin | 4                                                                       |
| <b>Ambient conditions</b> |                       |     |      |                                                                         |
| Temperature               |                       |     |      |                                                                         |
|                           | Operating temperature |     |      |                                                                         |
|                           |                       | min | °C   | -20                                                                     |
|                           |                       |     |      | +45°C without derating (up to 55°C with derating)                       |
|                           |                       | max | °C   |                                                                         |
|                           | Storage temperature   |     |      |                                                                         |
|                           |                       | min | °C   | -30                                                                     |
|                           |                       | max | °C   | +80                                                                     |
| Relative humidity         |                       |     | %    | <80%                                                                    |
| Maximum Pollution degree  |                       |     |      | 2                                                                       |
| Overvoltage category      |                       |     |      | III                                                                     |
| Max altitude              |                       |     | m    | 2000m without derating                                                  |
| Climatic sequence         |                       |     |      | Z/ABDM (IEC/EN 60068-2-61)                                              |
| Shock resistance          |                       |     |      | 15g (IEC/EN 60068-2-27)                                                 |
| Vibration resistance      |                       |     |      | 0.7g (IEC/EN 60068-2-6)                                                 |
| <b>Housing</b>            |                       |     |      |                                                                         |
| Execution                 |                       |     |      | Internal panel version                                                  |
| Material                  |                       |     |      | Polycarbonate                                                           |
| Mounting                  |                       |     |      | Screw fixing or DIN-rail (IEC/EN 60715) with optional accessory EXP8003 |
| Degree of protection      |                       |     |      | IP00                                                                    |
| Dimensions (W x H x D)    |                       |     | mm   | 75 x 218 x 171.5                                                        |
| Weight                    |                       |     | g    | 1740                                                                    |
| <b>Dimensions</b>         |                       |     |      |                                                                         |



## Wiring diagrams

### DCTL



## Certifications and compliance

### Compliance

IEC/EN 60947-4-3

IEC/EN 61000-6-2

IEC/EN 61000-6-4

Certificates

cULus

ETIM classification

ETIM 8.0

EC002055 -  
Solid state relay